Br Heart J 1990;64:354

Christmas editorial

Up tempo, down tempo

There is a poorly researched consensus that 2/4 and 4/4 rhythms originate from imitations of the human heart-beat and some evidence that changes in the tempo of music induce changes in the heart rate and mood of the listener.[1] Recordings of instrumental music reduced complications in patients admitted to a coronary care unit with presumed myocardial infarction.[2] Another study, however, showed that those left in peace fared just as well.[3] In a neonatal intensive care unit the Moonlight Sonata played to premature infants (gestational age 33–35 weeks) significantly reduced heart rate, blood pressure, and respiratory rate: a recording of the Sabre Dance did not.[4]

A study reported in this issue (p 388) shows that the heart rates of orchestral musicians rose significantly during rehearsals and performance. The effect of playing music on heart rate was greater for the music of Rachmaninov and Tchaikovsky than for Richard Strauss and Mozart. Some individuals achieved heart rates that they would probably have had difficulty in sustaining had these rates been induced by exercise.

Surveys of performing instrumental musicians show that about half of them have medical problems related to playing, some of which threaten or terminate their careers.[5] Recently, there have been indications that these problems have gained wider recognition and have been treated more sympathetically.[6] The main problems are psychological stress, including stage fright, and muscle overuse syndromes.

A study of orchestral players in London commissioned by the British Performing Arts Medicine Trust showed that among 222 musicians 72% experienced nervousness during a performance that interfered with their playing and a fifth of these reported that this happened frequently.[7] In that survey 21% took β blockers, tranquillisers, or alcohol to control nervousness before a performance, and 28% took one or other of these agents before an audition. Musicians from provincial British orchestras gave more concerts and had fewer rehearsals than those in continental Europe. Not surprisingly, the British musicians had more performance-related anxiety than their continental counterparts.[7] The risks and benefits of β receptor blocking drugs and tranquillisers for musicians should be carefully assessed in each individual.[8]

In the United States, a survey organised by the International Conference of Symphony and Opera Musicians showed that 39% of 2212 players from 47 orchestras who responded had psychological problems including acute anxiety in 13% and cardiovascular problems in 18%.[5] These cardiovascular problems included hypertension (10%) and "heart conditions" (4%) and their occurrence was positively correlated with the musician's perception of the amount of stress experienced.[9] Some 40% of the orchestral musicians surveyed had tried prescribed medication for the treatment of stage fright and most (92%) had found it effective. The drugs most used were β receptor blocking agents and 27% of the musicians had used propranolol or some other β receptor blocker. Women (31%) were more likely than men (26%) to use these drugs and they were more commonly taken by those under 35 (30%) than by those over 45 (20%). Not all use of β blocking drugs among orchestral musicians was for treatment of stage fright: 19% of users had them prescribed daily for conditions affecting the heart, for headache, or for some other indication. Another group (11%) had been prescribed β receptor blocking drugs but took them occasionally, presumably for stage fright. In this American survey, however, most of those using β receptor blocking drugs did so without a doctor's prescription. Those who had been prescribed β blockers, both inside and outside the orchestra, were the major suppliers of β blockers to musicians.

Does this occupational stress matter? In terms of the happiness of individual musicians and the difficulty that they have in maintaining cardiovascular fitness in a sedentary occupation, it might be surmised that they mostly have short, unhappy careers. However, a fascinating study of retired musicians all aged over 80 from one of America's great symphony orchestras challenged this view.[10] Their careers, which began in the 1920s and 1930s, were long and some retired only when they were well over 70. Players of string instruments had longer careers than players of brass and woodwind instruments. Although these retired musicians continued to love music and to listen to it after retirement, few continued to play seriously.

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